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کتاب خلاصه مقالات



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## Persistent Hypoglycemia Complicating Metformin Overdose in a Non-Diabetic Adult

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**Background:** Biguanides are used as anti-hyperglycemic agents for type 2 diabetics, and to induce ovulation and improve glucose control in Polycystic Ovarian Syndrome (PCOS). Metformin reduces glucose production and insulin resistance, but does not increase insulin release. Hypoglycemia is an expected side effect with agents that increase insulin release, but not with agents that modify insulin resistance. We describe a case of a patient who developed persistent hypoglycemia after a large OD of Metformin. Case Report: A 29 yo female with a history of PCOS presented to the emergency department 1 hour after ingesting 45 grams of metformin in a suicidal gesture. She denied co-ingestants. On arrival she was drowsy but oriented. Charcoal was held for depressed mental status. Her initial labs on arrival were: glucose 73 mg/dL, lactate 0.9 mmol/L and creatinine 1.0 mg/dL. Over the next 8 hours she became less responsive and had a bedside glucose of 11 mg/dL. After 25 grams of D50 her glucose was 153 mg/dL, falling

1 hour later to 67 mg/dL. Despite a D10 drip, she had glucose values of 67, 83, and 54 mg/dL over the next 4 hours. Her lactate peaked at 13.9 mmol/L and her creatinine peaked at 2.2 mg/dL during that time period. Pertinent labs include normal levels of hemoglobin A1C (5.0 %) and c-peptide (3.3 ng/mL), and an elevated metformin 39 mcg/ml (therapeutic 1–2 mcg/mL) 8 hours after ingestion. Urine comprehensive drug assay was positive for loxapine and benzodiazepine

metabolites. Sulfonylurea screen was negative. The patient improved significantly after 4 hours of dialysis with reversal of acute renal failure, lactic acidosis and hypoglycemia. She was transferred to psychiatry on hospital day 3. Case Discussion: Hypoglycemia is rarely reported after metformin overdose and in most cases co-ingestants may account for low blood sugar. Persistent hypoglycemia requiring a glucose infusion was necessary in our patient while no other causes for hypoglycemia was found by history or lab data. Conclusion: While uncommon, clinicians caring for similar patients should be mindful of this potential complication and closely follow blood glucose values to promptly diagnose hypoglycemia.